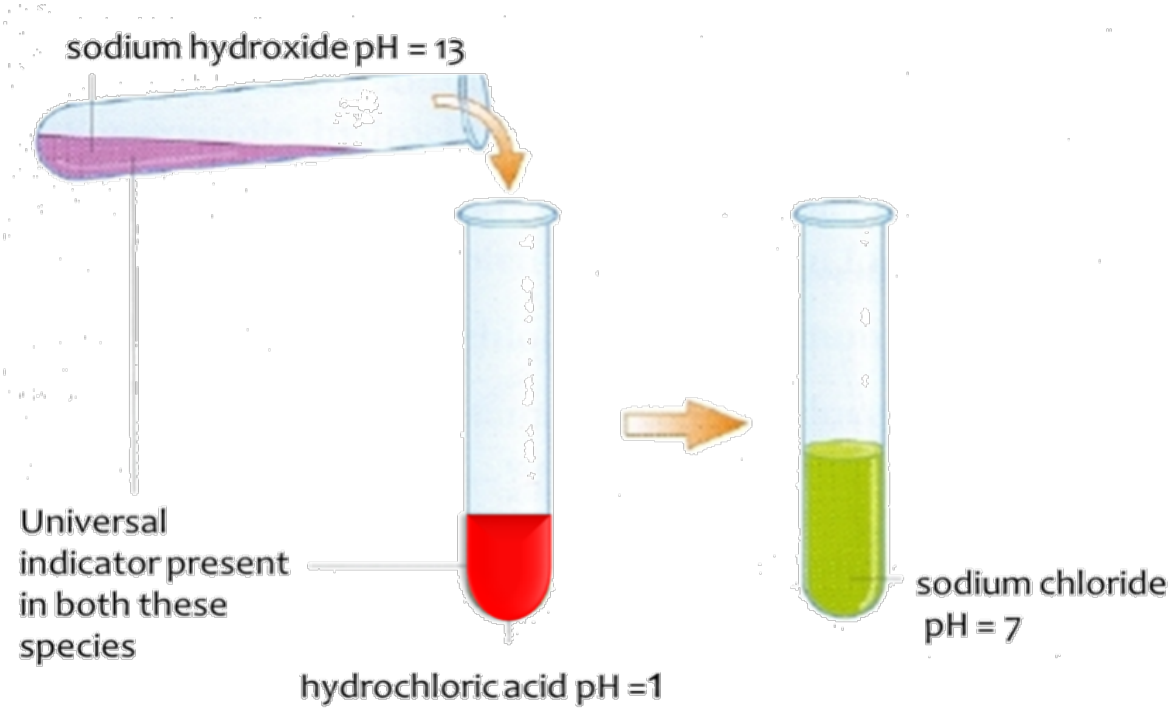
During neutralisation reactions acids combine with bases to form a salt and water

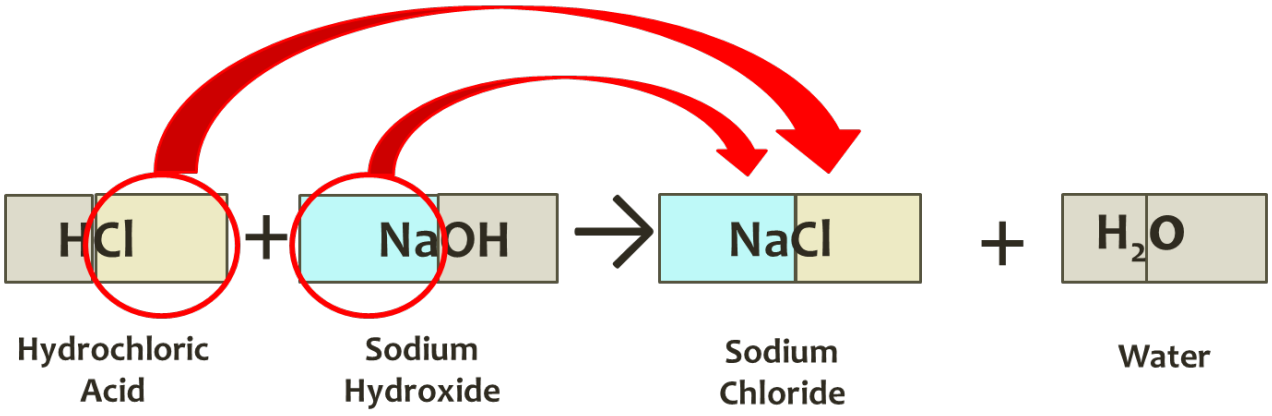
Neutralisation is a reaction where an acid reacts with an alkali to form a neutral solution of a salt and water. Acid + Alkali → Salt + Water



Names of salts

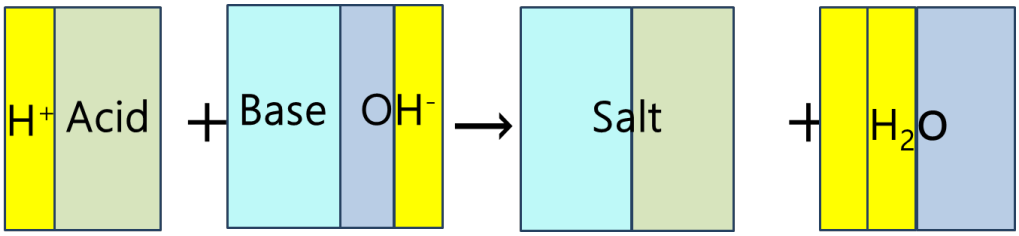
When salts are formed the name depends upon the acid reacted and the metal that forms part of the base compound.

Name of acid	Name of salt formed
Hydrochloric acid	chloride
Sulfuric acid	sulfate
Nitric acid	nitrate

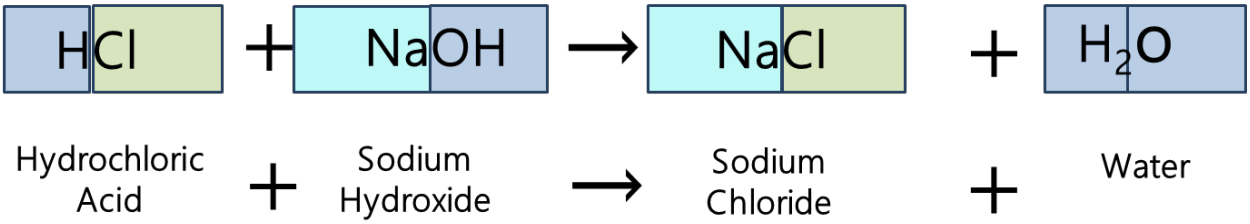


Acid-Base reactions

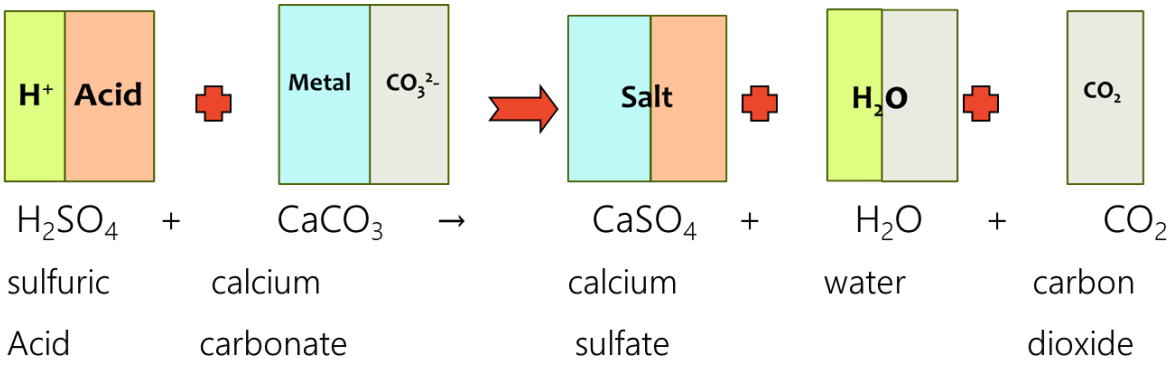
Bases **neutralise** acids, and a salt and water are formed



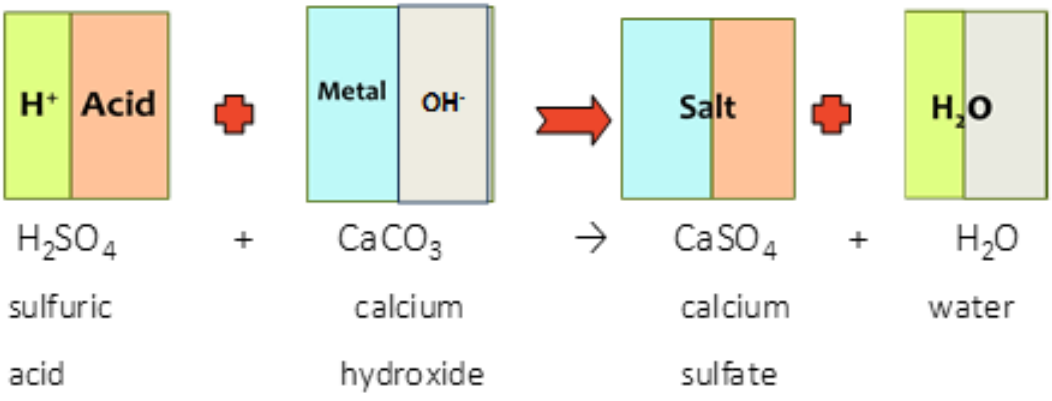
Example



Acids react with Carbonates to give a salt and water and carbon dioxide. We can test to see if carbon dioxide has formed by bubbling the gas into another test tube filled with limewater. The limewater will turn cloudy if the gas is carbon dioxide.



Acids react with hydroxides to give a salt and water. We can test to see if a solution has been neutralized (all the acid and base has reacted to form salt and water) by testing with universal indicator which will turn green.



1. Complete the table to show the salt name.

Step 1. Underline metal in the base, write as first part of salt name Step 2. Identify type of salt formed due to acid – i.e. hydrochloric acid forms chlorides

Base	Acid	Salt formed
sodium hydroxide	nitric acid	sodium nitrate
calcium carbonate	nitric acid	
magnesium oxide	nitric acid	
potassium hydroxide	hydrochloric acid	
sodium hydroxide	hydrochloric acid	
sodium hydrogen carbonate	hydrochloric acid	
zinc oxide	sulfuric acid	
aluminium hydroxide	sulfuric acid	
copper oxide	sulfuric acid	

2. Write the formula of the salt – using cross and drop method or visual method (see ionic compounds)

Name of compound	zinc oxide
Formula of ions	
Number of each ion required to balance charges	
Formula of compound	

Name of compound	lead chloride
Formula of ions	
Number of each ion required to balance charges	
Formula of compound	

Name of compound	Magnesium nitrate
Formula of ions	
Number of each ion required to balance charges	
Formula of compound	

Name of compound	Potassium sulfate
Formula of ions	
Number of each ion required to balance charges	
Formula of compound	

3. For each of the following reactions, complete the tables by providing the missing equations.

The reaction between hydrochloric acid and calcium carbonate

Word equation	
Chemical equation	$2\ HCl + CaCO_3 \rightarrow CaCl_2 + H_2O + CO_2$
General equation	

The reaction between hydrochloric acid and sodium carbonate

Word equation	hydrochloric acid + sodium carbonate → sodium chloride + water + carbon dioxide
Chemical equation	
General equation	

The reaction between hydrochloric acid and magnesium hydroxide

Word equation	
Chemical equation	$2\ HCl + Mg(OH)_2 \rightarrow MgCl_2 + 2\ H_2O$
General equation	

The reaction between nitric acid and calcium carbonate

Word equation	Nitric acid + calcium carbonate → calcium nitrate + carbon dioxide + water
Chemical equation	
General equation